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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* WALTER F. RAUSCH, HARRY PERLOW,  
MICHAEL P. DENNY, GARY THOMAS SCHICK,  
ROBERT GARRETT, ROBERT PIPPERT, GEORGE V.  
MOURA, and ANTHONY A. PANELLA

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Appeal 2008-2485  
Application 10/083,165  
Technology Center 2600

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Decided: October 20, 2008

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Before KENNETH W. HAIRSTON, JOHN A. JEFFERY, and BRADLEY W. BAUMEISTER, *Administrative Patent Judges*.

BAUMEISTER, *Administrative Patent Judge*.

DECISION ON APPEAL

## STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 (2002) from a final rejection of claims 1 to 26.<sup>1</sup> We have jurisdiction under 35 U.S.C. § 6(b) (2002). We reverse.

### A. *Appellants' invention*

Appellants' invention relates to a wireless communication system and communication services method that includes an omnidirectional transmitting antenna that transmits wireless signals and also includes multiple receiving antennas that receive wireless signals from multiples sectors. Specifically, a plurality of first receiving antennas receives second signals from respective "sectors." A sector is the coverage area of a single first receiving antenna. Within a given sector, a second receiving antenna

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<sup>1</sup> The Examiner asserts that claims 8-11 and 21-24 are NOT on appeal because those claims have not been presented for review in the Appellants' brief (Ans. 2-3).

The Examiner is correct that Appellants did not expressly state that the obviousness rejection of these claims was one of the grounds of rejection to be reviewed on appeal, per 37 C.F.R. § 41.37(c)(1)(vi). Rather, Appellants included these claims in their statement of the Ground of Rejection to be Reviewed on Appeal: "Whether claims 1-26 are anticipated [by Carey]" (App. Br. 4).

We find Appellants' statement to be sufficient to raise claims 8-11 and 21-24 on appeal because these claims respectively depend from independent claims 1 and 14, and because these dependent claims are rejected for obviousness over the same prior art (i.e., Carey) applied in the same manner as in the anticipation rejection of claims 1-7, 12-20, 25, and 26. We therefore interpret Appellants' statement of the Ground of Rejection to be Reviewed on Appeal as intending to state that claims 8-11 and 21-24 were rejected as obvious instead of as anticipated. Accordingly, we will treat all of claims 1-26 as being appealed.

receives third signals from a second coverage area that is within the first coverage area.

*B. The claims*

The independent claims under appeal, claims 1 and 14, read as follows:

1. A communication system for providing communication services to a plurality of communication devices, the communication system comprising:
  - a transmitting antenna;
  - a transmitter connected to the transmitting antenna and configured to transmit first wireless signals via the transmitting antenna;
  - a first receiving antenna wherein a first coverage area of the first receiving antenna is less than forty five degrees;
  - a first receiver connected to the first receiving antenna and configured to receive second wireless signals via the first receiving antenna;
  - a second receiving antenna wherein a second coverage area of the second receiving antenna is less than forty five degrees and the second coverage area of the second receiving antenna is within the first coverage area;
  - a second receiver connected to the second receiving antenna and configured to receive third wireless signals via the second receiving antenna; and
  - a communication interface connected to the transmitter, the first receiver, the second receiver, and a communication network and configured to provide the communication services

between the communication network and the user communication devices.

14. A method for providing communication services to a plurality of communication devices, the method comprising:

in a transmitter, transmitting first wireless signals via a transmitting antenna;

in a first receiver, receiving second wireless signals via a first receiving antenna wherein a first coverage area of the first receiving antenna is less than forty five degrees;

in a second receiver, receiving third wireless signals via a second receiving antenna wherein a second coverage area of the second receiving antenna is less than forty five degrees and the second coverage area of the second receiving antenna is within the first coverage area; and

in a communication interface connected to the transmitter, the first receiver, the second receiver, and a communication network, providing the communication services between the communication network and the user communication devices.

*C. The reference and rejections*

The Examiner relies on the following prior art reference to show unpatentability:

Carey et al.

US 2002/0068612

Jun. 6, 2002

1. Claims 1-7, 12-20, 25 and 26 stand rejected under 35 U.S.C. § 102(b) for anticipation by Carey et al.
2. Claims 8-11 and 21-24 stand rejected under 35 U.S.C. § 103(a) as obvious over Carey et al.

Rather than repeat the arguments of Appellants or the Examiner, we refer to the Briefs and the Answer<sup>2</sup> for their respective details. In this decision, we have considered only those arguments actually made by Appellants. Arguments which Appellants could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

*D. Findings of Fact*

The record supports the following findings of fact by a preponderance of the evidence:

1. It was known in the wireless communication arts to subdivide a subscriber region into adjacent angular slices or “sectors” such that each of a plurality of receiving antennas receives upstream wireless communication from a single sector. (Specification, 2–6 and Fig. 7).

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<sup>2</sup> We refer to (1) the Appeal Brief filed May 8, 2006; (2) the Examiner’s Answer mailed July 31, 2007; and (3) the Reply Brief filed July 14, 2005 throughout this opinion.

2. Carey discloses a sectored antenna system wherein receiver antennas for adjacent sectors receive signals in different frequency ranges (Carey, Fig. 5, and ¶¶ 0092-0101).
3. Carey discloses that more than one upstream/receiving or downstream/transmitting frequency channel may be employed in any sector and that more than one transceiver may be associated for each upstream/downstream channel pair in a sector (¶ 0080).
4. Carey does not further disclose that when multiple receiving antennas are employed in a sector, the area of coverage for one of these antennas may differ from, or be fully within, the area of coverage for another.

#### THE ANTICIPATION REJECTION OVER CAREY

The Examiner bases the rejection on the disclosure associated with Carey's Figures 4 and 5. As described therein, an antenna system employs multiple receiving antennas to receive wireless signals from multiple sectors. Figures 4 and 5 depict three antennas associated with three adjacent ones of these multiple sectors. First and third antennas for the first and third sectors, respectively, receive signals of a first frequency. The antenna for the middle, or second, sector receives signals of a second frequency. The Examiner's rejection is based on the rationale that the first and third sectors can be interpreted as together reading on the claimed first receiving antenna having a first coverage area. Under this interpretation, the coverage area for

the second receiving antenna would be within the first coverage area (Ans. 6-7).

Appellants contest the Examiner's interpretation of Carey. The gravamen of Appellants' complaint is that

...the examiner has used two different receiving antennas (antenna 180 and antenna 380) to create the "first receiving antenna" of claim 1. Figure 5 and the specification of Carey clearly show that receiving antenna 380 is separate from receiving antenna 180. Claim 1 requires "a first receiving antenna" that creates the first coverage area. The examiner has used two receiving antenna to create the first coverage area. Furthermore, if the examiner makes the claim that antenna 180 and 380 are the same antenna, then antenna 280 must also be a part of the same antenna[,] and Carey would only have one antenna, not a first and second antenna as required by claim 1 (Reply Br. 2).

#### A. ISSUE

The issue before us, then, is whether Appellants have shown that the Examiner erred in finding claims 1 and 14 anticipated by Carey. The issue turns on whether the Examiner's interpretation of Carey's disclosure was reasonable, and more specifically, what meaning should be attributed to the claim language, "coverage area."

For the following reasons, we find that the Examiner's interpretation cannot be sustained.

#### B. PRINCIPLES OF LAW

##### *Anticipation*

“[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). “[A]nticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim...” *In re King*, 801 F.2d 1324, 1326 (Fed. Cir. 1986) (citing *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458 (Fed. Cir. 1984)). “[A]bsence from the reference of any claimed element negates anticipation.” *Kloster Speedsteel AB v. Crucible, Inc.*, 793 F.2d 1565, 1571 (Fed. Cir. 1986).

*Claim Interpretation:*

“During examination, the claims must be interpreted as broadly as their terms reasonably allow.” *In re American Academy of Science Tech Center*, 367 F.3d 1359, 1369 (Fed. Cir. 2004). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). It is the use of the words in the context of the written description and customarily by those skilled in the relevant art that accurately reflects both the “ordinary” and the “customary” meaning of the terms in the claims. *Ferguson Beauregard/Logic Controls v. Mega Sys.*, 350 F.3d 1327, 1338 (Fed. Cir. 2003).

[The claims] are part of “a fully integrated written instrument,” ... consisting principally of a specification that concludes with the claims. For that reason, claims ‘must be read in view of the

specification.... [T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’”

*Phillips*, 1415 F.3d at 1315 (internal citations omitted).

### C. ANALYSIS

We adopt Appellants’ rationale set forth in the Reply Brief for why Carey fails to anticipate independent claims 1 and 14. The following analysis is added for completeness.

Appellants’ independent claims each require a first receiving antenna that has associated with it a first coverage area, and a second receiving antenna having a second associated coverage area, wherein the second coverage area is within the first coverage area (App. Br. 9-11, Claims App.). With these two receiving antennas, the network can receive wireless signals of a first frequency from customers located in two separated peripheral regions of the first coverage area and also receive wireless signals of a second frequency from customers in the central region of the first coverage area (Specification, Fig. 10).

The Examiner's rejection appears to be based upon the rationale that Carey anticipates claims 1 and 14 because the antenna system described by Carey also enables the same general effect: to allow the network to receive wireless signals of a first frequency from customers located in two separated regions and also receive wireless signals of a second frequency from customers in a central region that is interposed adjacently between the two first regions. However, the fact that Carey also enables this aspect of the invention does not mean that Carey's antenna system anticipates Appellants' invention as claimed.

Each of claims 1 and 14 includes language relating to two receiving-antenna coverage areas. The record provides ample evidence of how this claim language should be interpreted. In the context of a receiving antenna, "coverage area" is the area from which the antenna is generally capable of receiving wireless signals<sup>3</sup> (*see e.g.*, Specification, 5-6, 29-32, and Figs. 1, 7-11). No wireless signals actually need to be sent to the antenna from a certain location in order for the location to be deemed part of the "coverage area." It is sufficient that the antenna *be capable of* receiving a wireless signal if such a signal were to be sent from the location.

As such, Appellants' antenna system and communication services method, *as claimed*, are capable of receiving, within the second coverage area, wireless signals of both first and second frequencies. The fact that no wireless signals of the first frequency are being sent from within the second

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<sup>3</sup> For the sake of clarity, this definition ignores the issue of obstacles that may block some signals within certain portions of the coverage area.

coverage area does not negate the fact that the first receiving antenna would receive such first signals if they were to be sent.

In contrast, Carey's antenna system is designed such that each antenna produces coverage areas that generally do not overlap. There is no disclosure in Carey that one antenna may be positioned to have a coverage area that is within that of another antenna's coverage area. It is not sufficient that the antenna system depicted in Figure 5 of Carey is merely capable of receiving wireless signals of first, second and third frequencies, respectively, in adjacent sectors 152, 252 and 352. Carey's antenna system does not anticipate either claim 1 or 14 because that system is not capable of further receiving wireless signals of a first frequency from central sector 252.

For the foregoing reasons, Appellants have persuaded us of error in the Examiner's rejection of independent claims 1 and 14. Accordingly, we will not sustain the Examiner's rejection of those claims. Likewise, we will not sustain the Examiner's rejection of dependent claims 2-7, 12, 13, 15-20, 25, and 26 for similar reasons.

#### THE OBVIOUSNESS REJECTION OVER CAREY

The Examiner additionally rejected claims 8-11 and claims 21-24 as obvious over Carey (Ans. 5-6).

##### A. ISSUE

The issue before us is whether Appellants have shown reversible error by the Examiner in rejecting the claims as obvious over Carey. Resolution of this issue also turns on whether the Examiner's interpretation of Carey's

disclosure was reasonable, and more specifically, what meaning should be attributed to the claim language, “coverage area.”

For the following reasons, we find that the Examiner’s interpretation cannot be sustained.

*B. PRINCIPLES OF LAW*

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Discussing the question of obviousness of claimed subject matter involving a combination of known elements, *KSR Int’l v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007), explains:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida [v. AG Pro, Inc.]*, 425 U.S. 273 (1976) and *Anderson’s-Black Rock[Inc. v. Pavement Salvage Co.]*, 396 U.S. 57 (1969) are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

*KSR*, 127 S. Ct. at 1740. If the claimed subject matter cannot be fairly characterized as involving the simple substitution of one known element for

another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness can be based on a showing that “there was an apparent reason to combine the known elements in the fashion claimed.” *Id.* at 1740-41. Such a showing requires,

“ . . . some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness’ . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”

*Id.* at 1741 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

If the Examiner’s burden is met, the burden then shifts to the Appellants to overcome the *prima facie* case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d at 1445; *see also In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (“On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.” (internal citation omitted)).

### C. ANALYSIS

Claims 8-11 and 21-24 were rejected as obvious—instead of as anticipated—solely because each of these claims further recited smaller angular-degree ranges for the first or second coverage areas (App. Br. 9, Claims App.). The rejection was based upon the theory that these further,

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more specific limitations were obvious in light of Carey's more general teachings (Ans. 5-6). Nothing in the obviousness rejection cures the deficiencies we have noted above in relation to the Examiner's anticipation rejection.

For the foregoing reasons, Appellants have persuaded us of error in the Examiner's rejection of claims 8-11 and 21-24. Accordingly, we will not sustain the Examiner's rejection of those claims.

## DECISION

The Examiner's rejection of claims 1-26 is reversed.

REVERSED

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